

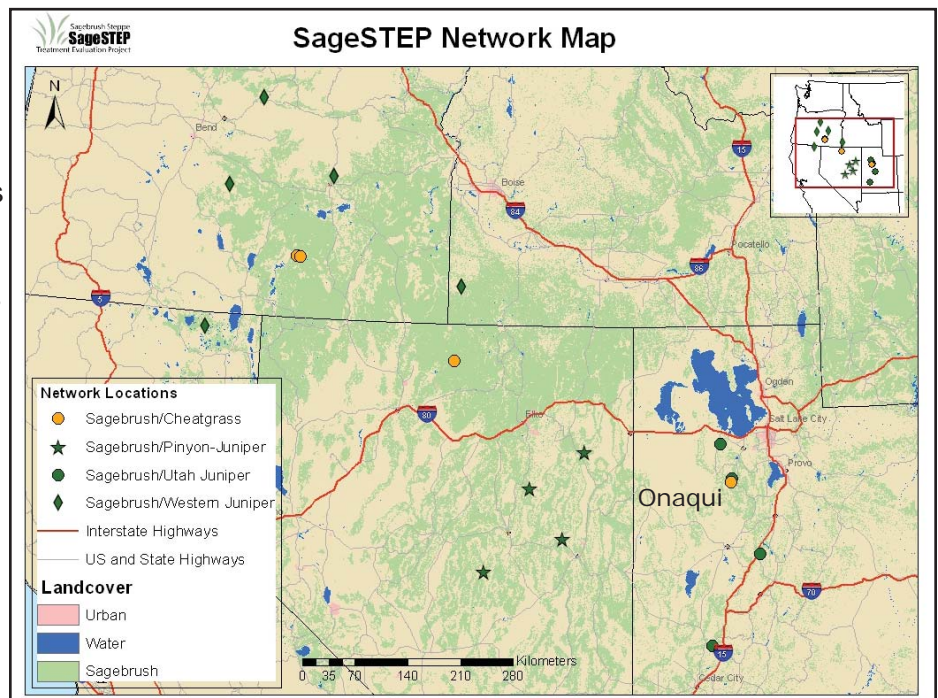
SageSTEP

Sagebrush Steppe Treatment Evaluation Project

SageSTEP (Sagebrush Steppe Treatment Evaluation Project) is an interdisciplinary, long-term research program exploring ways to improve the health of sagebrush rangelands across the Great Basin. The purpose of SageSTEP is to conduct research and provide land managers and stakeholders with improved information to make decisions about restoring sagebrush rangelands that have been degraded by conifer encroachment or exotic grassland invasion. The research team is comprised of experts in a variety of disciplines from five universities and five resource management agencies in five states encompassing the Great Basin.

Land management treatment options, including prescribed fire, mechanical thinning of shrubs and trees, and herbicide applications will be evaluated to learn how to create healthy and diverse plant communities that will be more resilient to fire and resistant to weed invasion. Baseline data was collected at most sites in the summer of 2006. Treatments are planned for fall of 2006 at most sites; the remainder will take place in 2007. Monitoring data will be collected in subsequent years to determine the impacts treatments.

Data include information about fuels, vegetation, soils, hydrology, wildlife, insects, and climate. Each sub-plot will be sampled for 10-, 100-, and 1000-hour fuels. Various vegetation measurements will be taken in both the over- and understory. Soils will be sampled for chemical analyses as well as soil profile descriptions. Hydrologists will quantify the relationships between changes in vegetation and ground cover and hydrologic and erosion processes. Studies of wildlife response will focus on passerine birds to determine if and how wildlife populations benefit from the alternative land management treatments.



SageSTEP will also include research on economic and sociopolitical impacts of sagebrush steppe restoration. The economic research component of this project will feature an environmental valuation study that will identify and measure changes in environmental benefits (such as recreation and ranching) resulting from ecosystem changes caused by the alternative land management treatments. The sociopolitical portion will focus on understanding the social acceptability of management practices as well as factors that influence managers' willingness to use them. Public lands comprise most of the Great Basin, so understanding the perspectives of citizens and land managers is crucial to successful implementation of treatments.

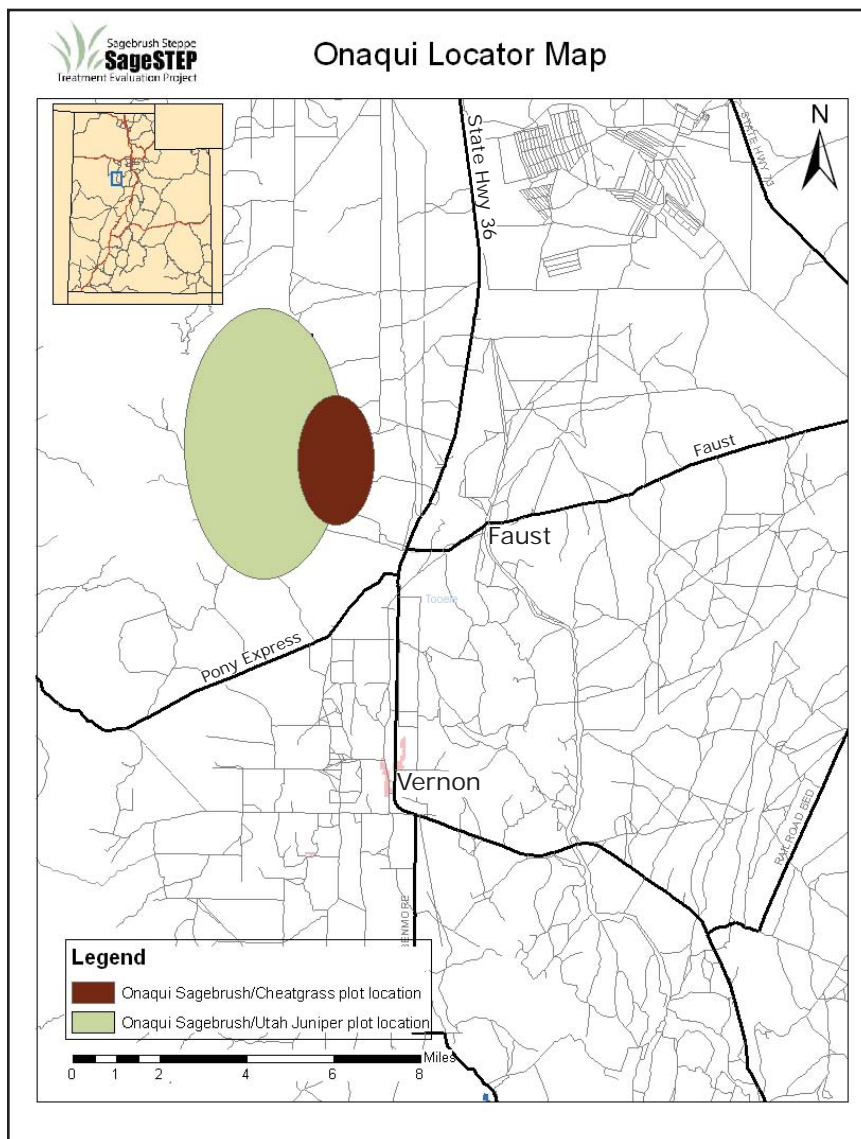
The large-scale scope along with the breadth of effects that will be assessed are part of what make this project unique. Results will provide resource managers with improved information to determine the impacts of treatments and make restoration management decisions with reduced risk and uncertainty.

Onaqui Research Sites

Two of the SageSTEP study sites are located in Rush Valley, Utah, on Bureau of Land Management (BLM) land just 90 minutes from Salt Lake City. Onaqui is unique in that it is the only SageSTEP network location where there are two sites with different vegetation composition adjacent to each other. One is a sagebrush/cheatgrass site, and the other is a sagebrush/Utah juniper site.

Each site consists of four 50 or 75-acre core plots which contain numerous sub-plots from which data are collected. The Onaqui sagebrush/Utah juniper site is one of only three sites in the network that also includes a 1000-acre burn plot with a paired 1000 acre control plot. These larger plots are used to better accommodate the study of hydrology and wildlife.

The Onaqui site is located on an active grazing allotment, therefore the plots will be fenced for five years to exclude livestock. Livestock grazing is not one of the treatments being tested in this study due to the fact that there is no single grazing treatment that could be applied identically across such a wide network of sites. Arrangements have been made for the Onaqui permittee to use other grazing land throughout the course of this study.



Onaqui Quick Facts

Nearest towns:

Vernon, UT (~5 miles)

Tooele, UT (~25 miles)

Sage/Cheat Plot Elevation:

5400-5500 ft.

Sage/Woodland Plot Elevation:

5500-6200 ft.

Land Management Agency: Bureau of Land Management, Salt Lake Field Office

Sage/Cheat Plots: Four 75-acre plots (Control, Burn, Mechanical, and Herbicide)

Sage/Woodland Plots: Four 50-acre core plots (Control, Burn, Mechanical, and Bull Hog™) and two 1000-acre extensive plots (Control and Burn)

Sage/Cheat Common Vegetation: Wyoming big sagebrush, shadscale, viscid rabbitbrush, sandberg's bluegrass, squirreltail, indian ricegrass, bluebunch wheatgrass and basin wildrye, and cheatgrass.

Sage/Woodland Common Vegetation: Utah Juniper, Wyoming big sagebrush, black sagebrush, bluebunch wheatgrass, Sandberg's bluegrass, Indian ricegrass, and various native wildflowers.

Onaqui Alternative Land Management Treatments

Alternative land management treatments are scheduled to take place at the Onaqui sites in the fall of 2006, and will be applied with the assistance of the BLM Salt Lake Field Office.

Treatments on the sagebrush/Utah juniper site are 1) mechanical, 2) prescribed burn, 3) Bull Hog™, 4) control (untreated). The mechanical treatment will involve clearcutting all trees down to 1/2 meter in height and leaving them on the contour. Thinning will also occur in a buffer zone around each mechanical core plot. Prescribed burns will blacken 100% of the woodland core plots. Burns will blacken 50 to 70% of the 1000-acre extensive plot. The Bull Hog™ will be used to clear all trees. This treatment is only taking place at Utah woodland sites because it has been of local interest to Utah landowners. The primary goal of Bull Hogging™ is fuel reduction to reduce fire hazards; other goals include improved understory plant growth and wildlife habitat.



Treatments on the sagebrush/cheatgrass site are 1) mechanical (mowing), 2) prescribed burn, 3) herbicide application, 4) control (untreated). Mowed plots will be mowed at a height of 6-12 inches; the prescribed burn will blacken 100% of the treatment plot; and the herbicide Tebuthiuron (Spike 20P) will be applied at 1.5 lbs/acre. The goal of the mechanical and chemical treatments is to kill about 50% of the sagebrush, not eliminate it. A Plateau pre-emergence herbicide treatment will be crossed at the subplot level with the four main treatments on half of the site's subplots to achieve cheatgrass control. No treatments will occur in any of the control plots for the duration of the project.

For more information about the SageSTEP Onaqui research sites, please contact:

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